DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE: EDS-545(20) & (37) Franklin/Stephens
P. I. No.: 122110 & 122260
S.R. 17 Widening/Reconstruction

OFFICE: Engineering Services

DATE: November 13, 2007

FROM: Brian Summers, P.E., Project Review Engineer RLW

TO: Babs Abubakari, P.E. State Consultant Design and Program Delivery Engineer

SUBJECT: IMPLEMENTATION OF VALUE ENGINEERING STUDY ALTERNATIVES

Recommendations for implementation of Value Engineering Study Alternatives are indicated in the table below. Incorporate alternatives recommended for implementation to the extent reasonable in the design of the project.

ALT No.	Description	Savings PW & LCC	Implement	Comments
EDS-545(20) --- P.I. No. 122110				
20-1	Use Asphalt Paving in lieu of Concrete Paving	$13,854,445	No	The recommended Pavement Design from the Office of Materials and Research is Concrete Pavement.
20-6	Use Walled Abutments in lieu of End Spans	$854,183	No	Approval of the Bridge Plans from the Railroad for this change would delay the schedule. This project is into the Final Plan Stage.
20-8	Shorten the left and right turn lane storage lengths	Design Suggestion	No	Based on Capacity Analysis, the Left Turn Storage Lengths shown are required.
20-9	Shorten the U-turn lane storage lengths	Design Suggestion	No	Based on Capacity Analysis, the U- Turn Storage Lengths shown are required.
20-10	Delete "channelized" turn feature, Use Type A if volume permits	$1,286,174	No	This is a safety concern. The offset Type "B" Median Opening is preferred.

ALT No.	Description	Savings PW & LCC	Implement	Comments
EDS-545(20) --- P.I. No. 122110 - continued				
20-11	Use Conspan™ in lieu of Concrete Box Culverts	$462,105	Yes	This should be done where possible. Further Geotechnical evaluations should be done to verify locations where this can be used.
20-12	Eliminate Cross Slope break for 2' shoulders (concrete pavement)	Design Suggestion	Yes	This should be done.
20-14	Review profile/cross slopes to eliminate ponding potential	Design Suggestion	Yes	This should be done.
20-15	Complete construction of all side roads prior to staging S.R. 328	Design Suggestion	Yes	This should be done.
20-17	Consider having approaching roadway section identical to the bridge section	Design Suggestion	No	This would result in increased cost since the bridge would have to be widened to match the roadway typical section.
20-18	Construct a left turn lane on Arrowhead Road	Design Suggestion	Yes	This should be done.
EDS-545(37) --- P.I. No. 122260				
37-2	Reduce Bridge width by providing a Davis Road Cul-de-sac	$461,632 (Original) $230,816 (Revised)	Yes	This will be a partial implementation. The bridge width will be reduced but the Davis Road access will be maintained.
37-3	Reduce Bridge width by using a Type A median crossover in lieu of a Type B median crossover at Eastanollee Road	$230,089	Yes	This should be done. Since VE Alternate "C-6" will also be implemented, a Type C Median Opening will be used.
37-4	Retain and overlay the existing pavement from Sta. 485+00± to Sta. 526+00±	$309,287	Yes	This should be done.
37-5	Use Keystone™ Walls in lieu of MSE Walls at Sta. 546+50±	$140,351	No	These walls are typically not used on GDOT Projects where the height exceeds 20'.

ALT No.	Description	Savings PW & LCC	Implement	Comments
EDS-545(37) --- P.I. No. 122260 - continued				
37-6	Retain and overlay the existing pavement from Sta. 400+00± to Sta. 485+00±	$658,361	Yes	This should be done.
37-7	Relocate Bike Lanes from roadway to Multi-Use Trail	Design Suggestion	No	The Design Office does not recommend due to safety concerns with Bikes and Pedestrians bring on the same facility.
37-8	Use Conspan™ in lieu of Concrete Box Culverts	$169,108	Yes	This should be done where possible. Further Geotechnical evaluations should be done to verify locations where this can be used.
37-10	Review profile/cross slopes to eliminate ponding potential	Design Suggestion	Yes	This should be done.

A meeting was held on November 5, 2007 to discuss the above recommendations. Keith Kunst with Arcadis, Nicoe Alexander with Consultant Design, and Brian Summers and Ron Wishon with Engineering Services were in attendance.

Approved: Dee MR **Date:** 4/16/08

Gerald M. Ross, P. E., Chief Engineer

BKS/REW

Attachments

c: Gus Shanine
Todd Long
Randy Hart
Mike Haithcock
Nicoe Alexander
Steve Gaston
Randy Davis
Rob Mabry
Ken Werho
Alexis John
Lisa Myers

PRECONSTRUCTION STATUS REPORT

PROJ ID	COUNTY	DESCRIPTION	MGMT. ROW DATE	SCHED DATE	MGMT. LET DATE
122110-	Franklin, Stephens	SR 17 FM S OF FRANKLIN COUNTY LINE TO N OF CR 24/SCOTT ROAD	Jun-07	Oct-09	Jul-09

EDS00-0545-00(020) *FIELD DIST:* 1
TIP #: *TWIN:* *US:*
MPO: Not Urban *EST DATE:* 11/15/07
MODEL YR:
PROJ MGR: Alexander, Nicoe *PROJ LENGTH:* 6.30
PROG TYPE: Reconstruction/Rehabilitation *TYPE WORK:* Widening
CONCEPT: NL 4R(MED 44) *LET RESP:* DOT Congressional Districts: 10

Phase	Approved	Proposed	Cost	Fund	Status
PE	1994	1994	2,035,021.65	EDS	AUTHORIZED
PE	2002	2002	2,356,800.00	GRVA	AUTHORIZED
ROW	2007	2007	7,963,000.00	L240	AUTHORIZED
CST	LR	LR	55,286,000.00	L240	PRECST

SCHED START	SCHED FINISH	ACTIVITY	ACTUAL START	ACT/EST FINISH	PCT	DISTRICT COMMENTS
		Define Project Concept	4/23/91	4/5/01	95	P.I.M. HELD 11-29-93
		Concept Meeting	5/23/91	5/23/91	100	NEED R/W REVISIONS FROM VE
		Concept Submittal and Review	11/8/91	11/8/91	100	STUDY SINCE DECEMBER
		Receive Preconstruction Concept Approval	5/7/93	5/7/93	100	(RWM 03/04/2008)
		Management Concept Approval Complete	**5/7/93**	**5/11/93**	**100**	
		Revise or Re-validate Approved Concept	1/15/05	4/19/05	100	
4/16/08	4/22/08	Value Engineering Study	11/14/06		83	
		Public Information Open House Held	7/1/96	7/1/96	100	
		Environmental Approval	11/1/94	7/13/00	94	
		Public Hearing Held	7/27/99	7/27/99	100	
		Mapping	8/3/94	8/23/94	100	
		Field Surveys/SDE	8/7/95	9/1/95	100	
		Preliminary Plans	**11/20/03**	**11/21/05**	**90**	
		Preliminary Bridge Design	5/10/05	11/8/05	100	
		Underground Storage Tanks	12/31/91	5/7/92	100	
		404 Permit Obtainment	9/5/03	4/16/04	100	
		PFPR Inspection	7/14/05	7/15/05	100	
		R/W Plans Preparation	11/21/05	6/5/06	100	
		R/W Plans Final Approval	**6/8/06**	**6/23/06**	**100**	
		L & D Report Development and Approval	4/18/06	4/25/06	100	
8/14/09	8/18/09	R/W Acquisition	7/4/06		38	
7/18/08	7/31/08	Stake R/W			0	
		Soil Survey	1/6/98	8/25/98	100	
		Bridge Foundation Investigation	6/22/06	6/30/06	100	
4/11/08	**6/5/08**	**Final Design**	**11/21/05**		**46**	
4/11/08	4/22/08	Final Bridge Plans Preparation	12/6/06		90	
6/27/08	6/30/08	FFPR Inspection			0	
7/14/08	7/25/08	FFPR Response			0	

BIKE PROVISIONS INCLUDED?: Y *MEASUREMENT* E *CONSULTANT:* C *UT EST:* $ 509,000.00

PDD: BOND. NEED ENVIR COMPLETE. 10/5/99. MARTIN BYPASS 5/16/01.
Bridge: WEI 03/02/07 CONSUL - ARCADIS
Design: NA| ARCADIS| Final Plans| 080114
EIS: FONSI|Apvd 7.13.00|RE 6.16.07|OnSchedLET|Nable(3.14.08)
LGPA: STEPHENS SGN 6/92 UTIL|MARTIN SGN P UTIL|TOCCOA SGN DO P UTIL 4/96|RESCISSION LETTER SENT TO MARTIN/TOCCOA/STEPHENS 7-22-05.
Planning: FED-AID PE ADDED TO STIP SO FHWA WILL REVIEW ENVIRONMENTAL DOC
Prog. Develop: EDS CST funds for $17.293M converterd to H240
Programming: PART OF EDS-545(37)/PI 122260|#1 12-02|#2 11-06
Railroad: HWELL
Traffic Op: SEND FFPR PLANS FOR REVIEW 9/30/05| $-!PFPR SENT 7/5/05 SZ/N
Utility: OCD SUE: NEED 2ND SUBMISSION PLANS 04/04/03
EMG: M1402 (H85-E/V88) DTM DOT=M/S; C=ADD S/D

R/W INFORMATION:
PREL PARCEL CT: 69 *TOTAL PARCEL CT:* 85 *ACQUIRED BY:* DOT *ACQ MGR:* Whitecotton, Brad
UNDER-REVIEW CT: 11 *RELEASED* 32 *OPT-PEND CT:* 1 *DEEDS CT:* 9 *COND-PEND CT:* 0 *COND-FILED CT:* 0
RW CERT DT: *ACQUIRED CT:* 9 *RELOCATION CT:* 16

PRECONSTRUCTION STATUS REPORT

PROJ ID	COUNTY	DESCRIPTION	MGMT. ROW DATE	SCHED DATE	MGMT. LET DATE
122260-	Stephens	SR 17/SR 17 ALT FM CR 24/SCOTT ROAD TO CR 190/MEMORIAL DRIVE	May-07	Sep-09	Jul-09

EDS00-0545-00(037) *FIELD DIST:* 1
TIP #: *TWIN:* *US:*
MPO: Not Urban *EST DATE:* 11/15/07
MODEL YR:
PROJ MGR: Alexander, Nicoe *PROJ LENGTH:* 3.13
PROG TYPE: Reconstruction/Rehabilitation *TYPE WORK:* Widening
CONCEPT: ADD 4R(M20/44) *LET RESP:* DOT Congressional Districts: 10

Phase	Approved	Proposed	Cost	Fund	Status
PE	1994	1994	535,170.75	EDS	AUTHORIZED
PE	2002	2002	1,842,863.13	GRVA	AUTHORIZED
ROW	2007	2007	20,243,300.00	RRB	AUTHORIZED
CST	LR	LR	20,259,000.00	EDS	PRECST

SCHED START	SCHED FINISH	ACTIVITY	ACTUAL START	ACT/EST FINISH	PCT	DISTRICT COMMENTS
		Define Project Concept	12/18/96	12/31/96	95	
		Concept Meeting	12/31/96	12/31/96	100	
		Concept Submittal and Review	11/27/96	12/31/96	100	
		Receive Preconstruction Concept Approval	12/18/96	12/31/96	100	
		Management Concept Approval Complete	**1/9/97**	**1/9/97**	**100**	
4/11/08	7/10/08	Revise or Re-validate Approved Concept			0	
4/16/08	4/22/08	Value Engineering Study	11/14/06		83	
		Public Information Open House Held	5/31/95	5/31/95	100	
		Environmental Approval	11/1/94	7/13/00	94	
		Public Hearing Held	7/27/99	7/27/99	100	
		Mapping	4/25/05	5/15/05	100	
4/14/08	5/16/08	Field Surveys/SDE			0	
		Preliminary Plans	**11/20/03**	**3/24/06**	**89**	
		Preliminary Bridge Design	3/13/06	3/17/06	100	
4/16/08	4/15/08	Underground Storage Tanks	6/24/02		60	
		404 Permit Obtainment	9/5/03	4/16/04	100	
		PFPR Inspection	2/28/06	3/1/06	100	
		R/W Plans Preparation	3/27/06	5/2/06	100	
		R/W Plans Final Approval	**6/8/06**	**6/21/06**	**100**	
		L & D Report Development and Approval	4/18/06	4/25/06	100	
7/17/09	7/21/09	R/W Acquisition	7/4/06		38	
7/18/08	7/31/08	Stake R/W			0	
		Soil Survey	1/3/06	2/3/06	100	
		Bridge Foundation Investigation	6/21/06	11/13/06	100	
4/11/08	**7/8/08**	**Final Design**	**3/27/06**		**46**	
4/11/08	4/28/08	Final Bridge Plans Preparation	3/27/06		90	
7/30/08	7/31/08	FFPR Inspection			0	
8/14/08	8/27/08	FFPR Response			0	

BIKE PROVISIONS INCLUDED?: Y *MEASUREMENT* E *CONSULTANT:* C *UT EST:* $ 667,000.00

PDD: BOND. NEED ENVIR COMPLETE. FY01 CONSULTANT. 10/5/99.
Bridge: WEI 11/01/06
Design: NA| ARCADIS| Final Plans | 080114
EIS: FONSI|Apvd 7.13.00|RE 6.16.07|OnSchedLET|Nable(3.14.08)
LGPA: STEPHENS SGN DO UTIL 4-8-92|TOCCOA SGN DO UTIL 4-9-96|RESCISSION LETTER SENT TO STEPHENS & TOCCOA 5-25-05
Prog. Develop: CST STIP AMENDMENT #51 6-07
Programming: 626/PE=4-30-99|#1 12-02|#2 1-03|#3 3-07
Railroad: NO
Traffic Op: SEND PFPR PLANS FOR REV 9/30/05 |$-!pfpr sent 1/10/06 kw/nr
Utility: 2ND SUBMISSION PLANS TO PM 7 OF 8 10/10/07
EMG: M1481 (H85-E/V88) DTM; C=M/S/D

R/W INFORMATION:
PREL PARCEL CT: 65 *TOTAL PARCEL CT:* 94 *ACQUIRED BY:* DOT *ACQ MGR:* Whitecotton, Brad
UNDER-REVIEW CT: 25 *RELEASED* 32 *OPT-PEND CT:* 1 *DEEDS CT:* 13 *COND-PEND CT:* 1 *COND-FILED CT:* 0
RW CERT DT: *ACQUIRED CT:* 13 *RELOCATION CT:* 20

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE: EDS-545(20) and EDS-545(37), Franklin, Stephens County
Widening and Relocation of SR 17 from 0.75 miles
South of Franklin County Line to CR 24/Scott Road
Widening and Reconstruction of SR 17 from
CR 24/Scott Road to Memorial Drive
PI's 122110 & 122260

OFFICE: Consultant Design

DATE: October 22, 2007

FROM: Mohammed A. (Babs) Abubakari, P.E., State Consultant Design Engineer

TO: Brian Summers, P.E., Project Review Engineer

SUBJECT: **Responses to Value Engineering Study**

The VE team's recommendations are noted below in italics and Consultant Design's responses follow:

20-1 *Use asphalt paving instead of concrete paving.* Although the savings shown in the study comparing asphalt to concrete paving is accurate, it is just one of several factors used in the life-cycle cost analysis. The life-cycle analysis used by the Office of Materials and Research is attached. For those reasons mentioned in the attached document, Consultant Design does not recommend implementing this alternative.

20-6 *Use walled abutments in-lieu of end spans for SR 17 over old SR 17 and Norfolk Southern Railroad bridge.* As in 22-1, adjusting the profile will help with staging also. Consultant Design does recommend implementing this alternative.

20-8 *Shorten the left and right turn storage lengths.* These distances were calculated based on a 55 mph design speed throughout the corridor. For this reason, Consultant Design does not recommend implementing this design suggestion.

20-9 *Shorten the U-turn storage lengths.* These distances were calculated based on a 65 mph design speed throughout the corridor. For this reason, Consultant Design does not recommend implementing this design suggestion.

20-10 *Delete "channelized" turn feature, use "Type A" median opening if volume permits.* GDOT has programmed projects throughout the state to eliminate Type A median openings. This design should be consistent with other projects around the State. For this reason, Consultant Design does not recommend implementing this alternative.

20-11 *Use "Conspan" structures in lieu of concrete box culverts.* Although there will be some cost savings involved with this alternative, Conspan segments will require foundation

investigations to be performed to determine if a savings can be realized. Considering that there have been projects in this state where Conspan segments have required pile foundations, specific location investigations must be performed before a decision can be made. Depending on the foundation requirements, Conspan segments may be appropriate for the multi-barreled locations, however we do not feel that they would be warranted at single-barreled culvert locations since precast box segments could just as easily be used. Further discussion will be required between the Project Manager, the consultant, the Office of Bridge Design, and the Office of Materials & Research. For these reasons, Consultant Design will have to look at this further before we can recommend implementing this alternative.

20-12 *Eliminate cross slope break for 2' shoulders (concrete pavement).* This design suggestion will be implemented as part of the design process.

20-14 *Review profile/cross slopes to eliminate ponding potential.* This design suggestion will be confirmed in the design process.

20-15 *Complete construction of all side roads prior to staging SR 328.* This design suggestion will be confirmed during the Staging Process.

20-17 *Consider having approaching roadway section identical to the bridge section.* The bridge and roadway section were designed in accordance to GDOT policy. This design allows for a better safety approach transition from roadway to bridge. For these reasons, Consultant Design does not recommend implementing this design suggestion.

20-18 *Construct a left turn lane on Arrowhead Drive.* This design suggestion will be implemented as part of the design process.

37-2 *Reduce bridge width by providing a Davis Road cul-de-sac.* The bridge width would be reduced by eliminating the Davis Road intersection with SR 17, however, this may be difficult to implement. Although there is adequate alternate routing using Hickory Log Circle and Old Mill Bridge Road, Davis Road has been shown to have a right in right out entrance dating back to the original concepts and Public Hearing a decade ago. This Office will like to have input from the District before this suggestion may be implemented. This recommendation would not be necessary if alternative 37-6 is implemented with a raised median, since that would narrow the bridge and utilize one structure rather than two. Left-turn lanes would be of no consequence in that situation.

37-3 *Reduce Bridge Width by using a Type A in-lieu of Type B intersection at Eastanollee Rd.* GDOT has programmed projects throughout the state to eliminate Type A median openings. This design should be consistent with other projects around the State. For this reason, Consultant Design does not recommend implementing this alternative.

37-4 *Retain and Overlay the existing pavement from Sta 485+/- to Sta 526+/-.* Considering that no right-of-way has been acquired on this project yet, this change could be implemented with no adverse affect to construction schedule as long as design revision begins in the next few months. If the design speed is lowered to 55mph, strong consideration should be given to utilizing a raised median like the current 55 mph typical section. While this would require median curb and gutter, the section is completely in tangent, so median drainage and inside shoulder base and paving would be reduced or eliminated. In addition,

approximately 24 feet of required right-of way would be eliminated, cross drain structures and culverts would be shortened, and base and paving at median turn lanes would be reduced. For these reasons, Consultant Design does recommend implementing this alternative.

37-5 *Use Keystone in-lieu of MSE walls at Sta 546+50 +/-.* Current Georgia DOT policy limits the use of modular block wall (Keystone) to heights less than 20 feet. The proposed wall at this location shall be higher than 20 feet and will be required to stay as designed. For this reason, Consultant Design does not recommend implementing this alternative.

37-6 *Retain and Overlay the existing pavement from Sta 400+/- to Sta 485+/-.* Considering that no right-of-way has been acquired on this project yet, this change could be implemented with no adverse affect to construction schedule as long as design revision begins in the next few months. If the design speed is lowered to 55mph, strong consideration should be given to utilizing a raised median like the current 55 mph typical section. Impacts and benefits would be similar to those in Alternative 37-4, however, there would be significant additional cost savings in the reduction of bridge width at the Eastanollee Creek and Oggs Branch bridges. In addition, approximately 24 feet of required right-of way would be eliminated, and Alternatives 37-2 and 37-3 would not be necessary since their benefits would have already been realized by this change. The resulting cost savings from this change would be much higher than suggested and potentially greater than $1,500,000. For these reasons, Consultant Design does recommend implementing this alternative.

37-7 *Relocate bike lanes from roadway to a multi-use trail.* it is safer for pedestrian traffic to be separated from bike traffic. For this reason, Consultant Design does not recommend implementing this design suggestion.

37-8 *Use "Conspan" structures in lieu of concrete box culverts.* Due to environmental commitments, a bridge is requested at this location. The Bridge Foundation Investigation will determine the type of bridge needed at this location. With the existing skew angle of the structure, a bridge may be more suitable. For these reasons, Consultant Design will compare the costs of these two alternatives and go with the most cost-effective.

37-10 *Review profile/cross slopes to eliminate ponding potential.* This design suggestion will be confirmed in the design process.

If you have any questions, please call Nicoe Alexander at (404) 463-6135.

MBA:MAH:JNA

cc: Lisa Myers